

List of substances	Limitations
Ultramarine blue. Waxes, petroleum. Zinc hydrosulfite.	

(e) Textile and textile fibers are used as articles or components of articles that contact dry food only.

(f) The provisions of this section are not applicable to jute fibers used as prescribed by §178.3620(d)(2) of this chapter.

[42 FR 14572, Mar. 15, 1977, as amended at 46 FR 37042, July 17, 1981; 49 FR 4372, Feb. 6, 1984; 49 FR 5748, Feb. 15, 1984; 56 FR 42933, Aug. 30, 1991]

§ 177.2910 Ultra-filtration membranes.

Ultra-filtration membranes identified in paragraphs (a)(1), (a)(2), (a)(3), and (a)(4) of this section may be safely used in the processing of food, under the following prescribed conditions:

(a)(1) Ultra-filtration membranes that consist of paper impregnated with cured phenol-formaldehyde resin, which is used as a support and is coated with a vinyl chloride-acrylonitrile copolymer.

(2) Ultra-filtration membranes that consist of a sintered carbon support that is coated with zirconium oxide (CAS Reg. No. 1314-23-4) containing up to 12 percent yttrium oxide (CAS Reg. No. 1314-36-9).

(3) Ultra-filtration membranes that consist of an aluminum oxide support that is coated with zirconium oxide (CAS Reg. No. 1314-23-4) containing up to 5 percent yttrium oxide (CAS Reg. No. 1314-36-9).

(4) Ultrafiltration membranes that consist of a microporous poly(vinylidene fluoride) membrane with a hydrophilic surface modifier consisting of hydroxypropyl acrylate/tetraethylene glycol diacrylate copolymer.

(b) Any substance employed in the production of ultra-filtration membranes that is the subject of a regulation in parts 174, 175, 176, 177, 178 and §179.45 of this chapter conforms with the specifications of such regulation.

(c) Ultra-filtration membranes are used in the physical separation of dissolved or colloiddally suspended varying molecular size components of liquids

during the commercial processing of bulk quantities of food.

(d) Ultra-filtration membranes shall be maintained in a sanitary manner in accordance with good manufacturing practice so as to prevent potential microbial adulteration of the food.

(e) Ultrafiltration membranes identified in paragraph (a)(4) may be used to filter aqueous or acidic foods containing up to 13 percent of alcohol at temperatures not to exceed 21 °C (70 °F).

(f) To assure safe use of the ultra-filtration membranes, the label or labeling shall include adequate directions for a pre-use treatment, consisting of conditioning and washing with a minimum of 8 gallons of potable water prior to their first use in contact with food.

(g) Acrylonitrile copolymers identified in this section shall comply with the provisions of §180.22 of this chapter.

[42 FR 14572, Mar. 15, 1977, as amended at 53 FR 17925, May 19, 1988; 58 FR 48599, Sept. 17, 1993; 60 FR 54426, Oct. 24, 1995]

PART 178—INDIRECT FOOD ADDITIVES: ADJUVANTS, PRODUCTION AIDS, AND SANITIZERS

Subpart A [Reserved]

Subpart B—Substances Utilized To Control the Growth of Microorganisms

Sec.

178.1005 Hydrogen peroxide solution.

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Subpart C—Antioxidants and Stabilizers

178.2010 Antioxidants and/or stabilizers for polymers.

178.2550 4-Hydroxymethyl-2,6-di-*tert*-butylphenol.

178.2650 Organotin stabilizers in vinyl chloride plastics.

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Subpart D—Certain Adjuvants and Production Aids

- 178.3010 Adjuvant substances used in the manufacture of foamed plastics.
- 178.3120 Animal glue.
- 178.3125 Anticorrosive agents.
- 178.3130 Antistatic and/or antifogging agents in food-packaging materials.
- 178.3280 Castor oil, hydrogenated.
- 178.3290 Chromic chloride complexes.
- 178.3295 Clarifying agents for polymers.
- 178.3297 Colorants for polymers.
- 178.3300 Corrosion inhibitors used for steel or tinplate.
- 178.3400 Emulsifiers and/or surface-active agents.
- 178.3450 Esters of stearic and palmitic acids.
- 178.3480 Fatty alcohols, synthetic.
- 178.3500 Glycerin, synthetic.
- 178.3505 Glyceryl tri-(12-acetoxystearate).
- 178.3520 Industrial starch-modified.
- 178.3530 Isoparaffinic petroleum hydrocarbons, synthetic.
- 178.3570 Lubricants with incidental food contact.
- 178.3600 Methyl glucoside-coconut oil ester.
- 178.3610 *a*-Methylstyrene-vinyltoluene resins, hydrogenated.
- 178.3620 Mineral oil.
- 178.3650 Odorless light petroleum hydrocarbons.
- 178.3690 Pentaerythritol adipate-stearate.
- 178.3700 Petrolatum.
- 178.3710 Petroleum wax.
- 178.3720 Petroleum wax, synthetic.
- 178.3725 Pigment dispersants.
- 178.3730 Piperonyl butoxide and pyrethrins as components of bags.
- 178.3740 Plasticizers in polymeric substances.
- 178.3750 Polyethylene glycol (mean molecular weight 200–9,500).
- 178.3760 Polyethylene glycol (400) monolaurate.
- 178.3770 Polyhydric alcohol esters of oxidatively refined (Gersthofen process) montan wax acids.
- 178.3780 Polyhydric alcohol esters of long chain monobasic acids.
- 178.3790 Polymer modifiers in semirigid and rigid vinyl chloride plastics.
- 178.3800 Preservatives for wood.
- 178.3850 Reinforced wax.
- 178.3860 Release agents.
- 178.3870 Rosins and rosin derivatives.
- 178.3900 Sodium pentachlorophenate.
- 178.3910 Surface lubricants used in the manufacture of metallic articles.
- 178.3930 Terpene resins.
- 178.3940 Tetraethylene glycol di-(2-ethylhexoate).
- 178.3950 Tetrahydrofuran.

AUTHORITY: 21 U.S.C. 321, 342, 348, 379e.

SOURCE: 42 FR 14609, Mar. 15, 1977, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 178 appear at 61 FR 14482, Apr. 2, 1996, 66 FR 56035, Nov. 6, 2001, 66 FR 66742, Dec. 27, 2001, and 68 FR 15355, Mar. 31, 2003.

Subpart A [Reserved]

Subpart B—Substances Utilized To Control the Growth of Microorganisms

§ 178.1005 Hydrogen peroxide solution.

Hydrogen peroxide solution identified in this section may be safely used to sterilize polymeric food-contact surfaces identified in paragraph (e)(1) of this section.

(a) *Identity.* For the purpose of this section, hydrogen peroxide solution is an aqueous solution containing not more than 35 percent hydrogen peroxide (CAS Reg. No. 7722-84-1) by weight, meeting the specifications prescribed in paragraph (c) of this section.

(b) *Optional adjuvant substances.* Hydrogen peroxide solution identified in paragraph (a) of this section may contain substances generally recognized as safe in or on food, substances generally recognized for their intended use in food packaging, substances used in accordance with a prior sanction or approval, and substances permitted by applicable regulations in parts 174 through 179 of this chapter.

(c) *Specifications.* Hydrogen peroxide solution shall meet the specifications of the "Food Chemicals Codex," 3d Ed. (1981), pp. 146–147, which is incorporated by reference (copies may be obtained from the National Academy Press, 2101 Constitution Ave. NW., Washington, DC 20418, or may be examined at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC 20408), and the United States Pharmacopeia XX (1980), except that hydrogen peroxide may exceed the concentration specified therein.

(d) *Limitations.* No use of hydrogen peroxide solution in the sterilization of food packaging material shall be considered to be in compliance if more than 0.5 part per million of hydrogen peroxide can be determined in distilled water packaged under production conditions (assay to be performed immediately after packaging).

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(e) *Conditions of use.* (1) Hydrogen peroxide solution identified in and complying with the specifications in this section may be used by itself or in combination with other processes to treat food-contact surfaces to attain commercial sterility at least equivalent to that attainable by thermal processing for metal containers as provided for in part 113 of this chapter. Food-contact surfaces include the following:

Substances	Limitations
Ethylene-acrylic acid copolymers.	Complying with § 177.1310 of this chapter.
Ethylene-carbon monoxide copolymers.	Complying with § 177.1312 of this chapter.
Ethylene-methyl acrylate copolymer resins.	Complying with § 177.1340 of this chapter.
Ethylene-vinyl acetate copolymers.	Complying with § 177.1350 of this chapter.
Ionomeric resins	Complying with § 177.1330 of this chapter.
Isobutylene polymers ...	Complying with § 177.1420 (a)(1) and (a)(2) of this chapter.
Olefin polymers	Complying with § 177.1520 of this chapter.
Polycarbonate resins ...	Complying with § 177.1580 of this chapter.
Polyethylene-terephthalate polymers.	Complying with § 177.1630 of this chapter (excluding polymers described in § 177.1630(c)) of this chapter.
Poly- <i>i</i> -butene resins and butene/ethylene copolymers.	Complying with § 177.1570 of this chapter.
Polystyrene and rubber-modified polystyrene polymers.	Complying with § 177.1640 of this chapter.
Vinylidene chloride/methyl acrylate copolymers.	Complying with § 177.1990 of this chapter.

(2) The packaging materials identified in paragraph (e)(1) of this section may be used for packaging all commercially sterile foods except that the olefin polymers may be used in articles for packaging foods only of the types identified in § 176.170(c) of this chapter, table 1, under Categories I, II, III, IV-B, V, and VI.

(3) Processed foods packaged in the materials identified in paragraph (e)(1) of this section shall conform with parts 108, 110, 113, and 114 of this chapter as applicable.

[46 FR 2342, Jan. 9, 1981, as amended at 49 FR 10111, Mar. 19, 1984; 49 FR 32345, Aug. 14, 1984; 49 FR 37747, Sept. 26, 1984; 51 FR 45881, Dec. 23, 1986; 52 FR 26146, July 13, 1987; 53 FR 47186, Nov. 22, 1988; 54 FR 5604, Feb. 6, 1989; 54 FR 13167, Mar. 31, 1989; 54 FR 6365 Feb. 9, 1989; 55 FR 47055, Nov. 9, 1990; 57 FR 32423, July 22, 1992]

§ 178.1010 Sanitizing solutions.

Sanitizing solutions may be safely used on food-processing equipment and utensils, and on other food-contact articles as specified in this section, within the following prescribed conditions:

(a) Such sanitizing solutions are used, followed by adequate draining, before contact with food.

(b) The solutions consist of one of the following, to which may be added components generally recognized as safe and components which are permitted by prior sanction or approval.

(1) An aqueous solution containing potassium, sodium, or calcium hypochlorite, with or without the bromides of potassium, sodium, or calcium.

(2) An aqueous solution containing dichloroisocyanuric acid, trichloroisocyanuric acid, or the sodium or potassium salts of these acids, with or without the bromides of potassium, sodium, or calcium.

(3) An aqueous solution containing potassium iodide, sodium *p*-toluenesulfoncholoroamide, and sodium lauryl sulfate.

(4) An aqueous solution containing iodine, butoxy monoether of mixed (ethylene-propylene) polyalkylene glycol having a cloudpoint of 90°–100 °C in 0.5 percent aqueous solution and an average molecular weight of 3,300, and ethylene glycol monobutyl ether. Additionally, the aqueous solution may contain diethylene glycol monoethyl ether as an optional ingredient.

(5) An aqueous solution containing elemental iodine, hydriodic acid, *a*-(*p*-nonylphenyl)-*omega*-hydroxypoly-(oxyethylene) (complying with the identity prescribed in § 178.3400(c) and having a maximum average molecular weight of 748) and/or polyoxyethylene-polyoxypropylene block polymers (having a minimum average molecular weight of 1,900). Additionally, the aqueous solution may contain isopropyl alcohol as an optional ingredient.

(6) An aqueous solution containing elemental iodine, sodium iodide, sodium dioctylsulfosuccinate, and polyoxyethylene-polyoxypropylene block polymers (having a minimum average molecular weight of 1,900).

(7) An aqueous solution containing dodecylbenzenesulfonic acid and either isopropyl alcohol or polyoxyethylene-